Release Notes

HP StorageWorks OpenVMS Kit for Enterprise Virtual Array

Product Version: 3.0E

Fourth Edition (July 2004)

Part Number: AV-RUGXD-TE

This document contains the most recent product information about the HP StorageWorks OpenVMS Kit V3.0E used for integrating host servers with the StorageWorks Enterprise Virtual Array (VCS version 3.020).

For the latest version of the OpenVMS Release Notes and other documentation, access the HP storage web site at http://www.hp.com/country/us/eng/prodserv/storage.html.

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About this document

This section covers the following topics:

Release Notes information

These release notes cover the following topics:

Intended audience

This document is intended to assist customers who purchased the StorageWorks Enterprise Virtual Array and the associated StorageWorks Operating System kits. Other associated software packages are:

- StorageWorks Virtual Controller Software Package V3.020 for Dual HSV Controllers
- StorageWorks Snapshot for Virtual Controller Software V3.020 for Dual HSV Controllers

This document is also intended for use by HP Customer Service personnel responsible for installing and maintaining designated devices associated with this storage system.

Conventions

The following conventions are used throughout this document:

- Unless otherwise specified, all references to VCS V3.020 refer to the software package (kit) and documentation. These software packages and documentation support VCS V3.020.
- *The System Software for Enterprise Virtual Array* is the storage system software that contains Virtual Controller Software (VCS), Environmental Monitoring Unit (EMU) firmware, programmable component images, diagnostics, and message files. This storage system software is usually represented by a four-digit number like V3.020.
- Unless otherwise specified, all references to an HSV110 controller or an HSV110 controller pair should be interpreted as the HSV110 or HSV100 controller or controller pair.
- Unless otherwise specified, all references to the Enterprise Storage System or storage system should be interpreted as the EVA5000 or the EVA3000.
- Unless otherwise specified, all references to rack should be interpreted as the 9000-Series Enterprise Storage System Rack.
- Unless otherwise specified, all licensing references to host ID should be interpreted as the storage system world wide name (WWN).
- Unless otherwise specified, all references to the management appliance should be interpreted as the HP StorageWorks Management Appliance.
- Unless otherwise specified, all references to a single instance of a management agent should be interpreted as the HP StorageWorks Command View EVA.
- The term fabric means Fibre Channel Switched (FC-SW) connectivity.

New features

This section briefly describes new features and changes that are supported by the version 3.0E release of the platform kit.

- Support for VCS 3.020

Enterprise Virtual Array storage system

This document contains the most recent product information about the Enterprise Virtual Array. An Enterprise Virtual Array storage system consists of the following:

- One pair of HSV110 controllers.
- An array of physical disk drives that the controller pair controls. The disk drives are located in drive enclosures that house the support systems for the disk drives.
- Associated physical, electrical, and environmental systems.
- Command View EVA, which is the graphical interface to the storage system. Command View EVA software resides on the management appliance and is accessed through a browser.
- Management appliance, switches, and cabling.
- At least one host attached through the fabric.

Enterprise Virtual Array system software

The HP StorageWorks Virtual Controller Software (VCS) V3.020 included in the software kit provides storage software capability for the HSV110 controller.

Multiple storage system types

The extended interoperability of the heterogeneous SAN allows you to mix several types of HP StorageWorks storage systems. For more information about configuration rules, refer to the *HP StorageWorks SAN Design Reference Guide* at http://h18000.www1.hp.com/products/storageworks/san/documentation.html

Enterprise Virtual Array documentation

The Enterprise *Virtual Array Catalog of Associated Documentation* is included on the HP Technical Documentation page. You can display a comprehensive list of Enterprise Virtual Array documentation as well as documentation for products that may be required to operate your storage system. To access the technical documentation, go to

http://h18006.www1.hp.com/products/storageworks/enterprise/documentation.html

Supported configurations

Refer to the *Enterprise Virtual Array Quick Specs* for supported configurations. The *HP StorageWorks SAN Design Reference Guide* is a detailed guide for SAN configurations and is available at

http://h18004.www1.hp.com/products/storageworks/san/documentation.html

Supported operating systems

The Enterprise Virtual Array storage system is compatible with the following operating systems:

- Tru64 UNIX
- Windows NT/Windows 2000/Windows Server 2003 (32- and 64-bit)
- OpenVMS
- Sun Solaris
- HP-UX
- IBM AIX
- Linux
- Novell NetWare

Table 1 lists the operating system's specifications.

Note: Table 1 contains current minimum level operating system specifications at the time of the Enterprise Virtual Array V3.020 release. Some component versions may change due to revision. For the latest information, go to http://h18006.www1.hp.com/storage/index.html

Table 1: Operating system specifications

Platform	OS version	Clustering	FCA (HBA)	Adapter firmware
Open VMS	7.2-2 VMS722_FIBRE _SCSI_V0600	VMS Clusters	DS-KGPSA-CA	3.91a2/ 3.82a1
			DS-KGPSA-DA	3.91a1
			DS-KGPSA-CA	1.00x8
	7.3 VMS73_FIBRE _SCSI-V0700	VMS Clusters	DS-KGPSA-CA	3.91a1
			DS-KGPSA-DA	3.91a2
			DS-KGPSA-EA	3.91a1
	7.3-1 VMS731_FIBRE _SCSI-V0600	VMS Clusters	DS-KGPSA-CA	3.91a1
			DS-KGPSA-DA	3.91a1
			DS-KGPSA-EA	1.81a5
	7.3-2 VMS732_FIBRE _SCSI_VO300	VMS Clusters	DS-KGPSA-CA	3.91a1
			DS-KGPSA-DA	3.91a1
			DS-KGPSA-EA	1.00x8

Switch support

This kit supports the Fibre Channel switches and firmware versions listed in the *HP StorageWorks SAN Design Reference Guide* at http://h18000.www1.hp.com/products/storageworks/san/documentation.html

Note: HP recommends that you do not mix switch firmware versions in your SAN. It is considered a best practice to uniformly upgrade all switches in the SAN.

Multiple path support

OpenVMS requires no additional software for high availability multiple path capability. Multiple path capability is integrated into recent releases of these operating systems.

Single path support

OpenVMS servers require a single FCA to support single path mode.

Note: Single path mode should not be used in mission critical environments.

Supported Alpha servers

Table 2 lists the Enterprise Virtual Array compatible Alpha servers.

Table 2: Supported Alpha servers

Product	Maximum number of FCAs/Alpha system			
	Tru 64 UNIX switch		OpenVMS switch	
	Single	Cluster	Single	Cluster
AS800	2	2	2	2
AS1200	4	4	4	4
AS4100	4	4	4	4
AS4000	4	4	4	4
AS8200	64	32	26	26
AS8400	64	32	26	26
DS10	2	2	2	2
DS15	2	2	2	2
DS20	4	4	4	4
DS20 E	4	4	4	4
DS25	4	4	4	4
ES40	4	4	4	4
ES45	4	4	4	4
ES47	24	24	24	24
ES80	24	24	24	24
GS60	64	32	26	26

Table 2: Supported Alpha servers (Continued)

Product	Maximum number of FCAs/Alpha system			
	Tru 64 UNIX switch		OpenVMS switch	
	Single	Cluster	Single	Cluster
GS80	64	32	26	26
GS160	64	32	26	26
GS320	64	32	26	26
GS140	64	32	26	26
GS1280	32	32	32	26

Operating constraints

Any operating constraints specific to the Enterprise Virtual Array hardware and Command View EVA can be found in their respective release notes.

Failover/failback

Failback preference settings for the HSV controllers are specific to the operating system. Refer to the Enterprise Virtual Array hardware release notes for details.

Avoiding problem situations

The following sections describe problems that may arise during platform kit operation and their solutions.

Command View EVA

The Command View EVA release notes contain information on problems pertaining to Command View EVA.

Enterprise Virtual Array version 3.020 hardware

The hardware release notes in your VCS kit contain information on problems pertaining to Enterprise Virtual Array hardware.

Avoiding problem situations with the SSSU

Changing comments on a disk enclosure

You cannot use the SSSU to change comments on a disk enclosure. Use Command View EVA to change comments on a disk enclosure. If you try to change a disk enclosure comment in the SSSU, the following error message appears:

```
Error: Invalid Operation
```

Changing the name of a disk enclosure

Changing the name of a disk enclosure is not supported with the SSSU or with Command View EVA. If you try to change a disk enclosure name in the SSSU, the following error message appears:

```
Error: Invalid Operation
```

Enterprise Storage System notes

Cable requirements

When an Enterprise Virtual Array is connected to a 1Gb switch, an SC-to-LC cable is required for host connectivity. Table 3 and Table 4 list the available cables.

Table 3: LC-SC cables

Length	Description	HP part number
2.0 m ± 40 mm	CA ASSY, LC-SC, Optical 2M	187891-002
5.0 m ± 80 mm	CA ASSY, LC-SC, Optical 5M	187891-005
15.0 m ± 150 mm	CA ASSY, LC-SC, Optical 15M	187891-015
30.0 m ± 300 mm	CA-ASSY, LC-SC, Optical 30M	187891-030
50.0 m ± 500 mm	CA-ASSY, LC-SC, Optical 50M	187891-050

Table 4: LC-LC cables

Length	Description	HP part number
2.0 m ± 40 mm	2-meter LC-LC Multi-Mode Fibre Cable	221692-B21
5.0 m ± 80 mm	5-meter LC-LC Multi-Mode Fibre Cable	221692-B22
15.0 m ± 150 mm	15-meter LC-LC Multi-Mode Fibre Cable	221692-B23
30.0 m ± 300 mm	30-meter LC-LC Multi-Mode Fibre Cable	221692-B26
50.0 m ± 500 mm	50-meter LC-LC Multi-Mode Fibre Cable	221692-B27

Storage System Scripting Utility for Enterprise Virtual Array

Refer to the *Command View EVA Release Notes* prior to using the Storage System Scripting Utility (SSSU), as SSSU communicates directly with the Command View EVA.

Documentation Anomalies

On Page 18 of the *HP StorageWorks Storage System Scripting Utility Command View EVA Reference Guide, V3.2,* under OVMS, the procedure is incorrect.

Change the command under step 1 to read as follows:

```
$ Product remove SSSU
```

On Page 21 of the *HP StorageWorks OpenVMS for Enterprise Virtual Array Installation and Reference Guide,* under "Installing the Storage System Scripting Utility" the executable file name `sssu_pcsi_sfx.exe` is incorrect. Change step 2 to read as follows:

2. Copy the self-extracting executable file `SSUVxBLDxx.exe` from the CD-ROM to a temporary directory on the host system.